

Coastal Engineering Technical Note

SEDIMENT SAMPLE CARD

PROBLEM: Develop a technique for rapid visual analysis of a large number of sediment samples as a preliminary step in correlation.

BACKGROUND: Use of descriptive logs for comparative visual analysis of sediment from cores and borings is rarely as satisfactory as first hand study of the actual material. This is true because subtle visual properties which cannot be fully described are often important in showing relationships. Where large numbers of samples are being analyzed, comparison of the sediments in their original containers is cumbersome and requires considerable space for layout. In addition, the analyst, being unable to scan more than a few samples at a time, is less efficient in perceiving relationships. A useful expedient for making preliminary comparative analysis of a large number of samples is to glue small representative subsamples on illustration board cards.

The use of carded samples cannot eliminate the need for more complete work with the whole sample and for more sophisticated forms of analysis. However, carded samples are very useful during preliminary analysis and correlation, and as a basis for selection of representative samples for more detailed study.

PROCEDURE: Make sample cards from white illustration board readily available from commercial art and drafting supply companies. Almost any size card can be used depending upon the number of samples per core or boring. A size of 4x8 inches is satisfactory for the usual number of samples per core.

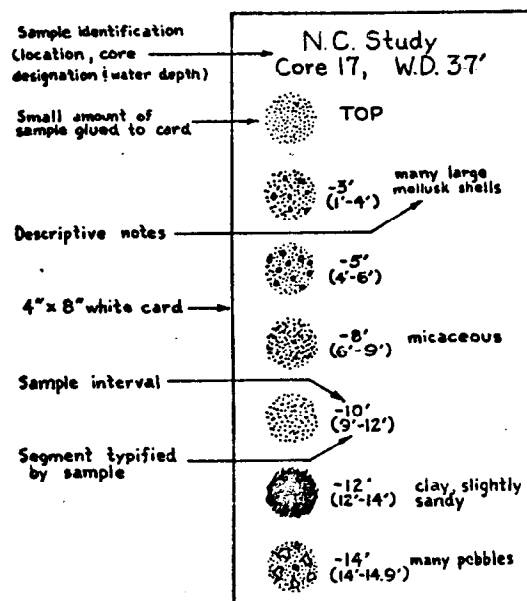


Figure. Representative Sample of Sediment Affixed to Card

Mount subsamples in stratigraphic order down the left side of the card in the following manner. Spread a small quantity of all purpose white glue on the card in the appropriate position along the left side over an area approximately one inch in diameter to a thickness of approximately 0.5mm. Distribute a small representative quantity of each sample evenly over the glue area. Upon drying the glue forms a relatively transparent matrix cementing the grains together. Each sample, in turn, is thus mounted down the left side of the card. After drying, tap the card lightly on the edge to remove excess loose material. As samples are mounted, enter information such as core designation, location, and sample interval on the right side of the card. A typical sample card is shown on the Figure. Small shells, pebbles, and possible artifacts, if included in a sample, can also be mounted if the glue layer is made somewhat thicker than for the more normal sand size material. Occurrence of large shell valves, pebbles, or peats in the core can be noted on the right side of the card at the corresponding sample interval.

Store filled core sample cards in boxes constructed of $\frac{1}{4}$ -inch plywood and 1-inch pine board with sawn slots at $\frac{1}{2}$ -inch intervals. The pine material is used for the sides of the box with the slotted sides facing inward. Slip the cards into slots, number, and store according to core number sequence.

DISCUSSION: The carded core samples in their storage boxes can be kept in work offices and large numbers of cards can be laid out on a desk or table for study. Continued restudy can be made with a minimum of effort. Also, the cards readily fit under a standard light binocular microscope for detailed examination and estimation of mean grain size or abundance of certain grain types of organisms. Duplicate core cards can be easily sent through the mail to a colleague for collateral study and the cards can be photographed for inclusion in analysis reports.